Mill Creek Bridge
Spanning Mill Creek on West Sixth Street
The Dalles
Wasco County
Oregon

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HISTORIC AMERICAN ENGINEERING RECORD

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Location:	Spanning Mill Creek on the Columbia River Highway (now the Mosier-The Dalles Highway), The Dalles, Wasco County, Oregon UTM: The Dalles, Oregon Quad. 10/641400/5051375
Date of Construction:	1920
Structural Type:	Reinforced-concrete deck girder
Engineer:	Conde B. McCullough, Oregon State Highway Department
Builder:	Lindstrom and Felgenson, Portland, Oregon
Owner:	City of The Dalles, Oregon
Use:	Vehicular and pedestrian bridge
Significance:	Mill Creek Bridge is an early example of a deck girder bridge designed by State Bridge Engineer Conde B. McCullough in 1920. It is 124' long, with four arched curtain walls, which disguise it as an arch bridge. The curtain wall features triangular pebble-dashed panels. The ornate urn-shaped balustrades and the reinforced concrete lampposts that are mounted on top of the posts in the railing are a noteworthy aspect of the design. This bridge was one of the final structures that completed the Columbia River Highway between Troutdale and The Dalles (1913-1921).
Project Information:	Documentation of the Mill Creek Bridge is part of the Oregon Historic Bridge Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and the Oregon Department of Transportation. Researched and written by Kenneth J. Guzowski, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.
Related Documentation:	For more information on Conde B. McCullough, see HAER OR-54.

HISTORY

The neighborhood of Mill Creek, which flows into the Columbia River at The Dalles, was called Quenett by the local Indians, which was their name for alsmon. Dr. William C. McKay is authority for the statement that the mouth of Mill Creek was called "will-look-it" by the Indians. This meant looking through an opening or gap.[1] Mill Creek is on the western edge of the city of The Dalles. French-Canadian fur traders named the community for the "dalles," the smooth gutter-like rocks in the rapids. The Dalles became the road terminus for the Oregon Trail in the 1840s. Until the Barlow Road was opened in 1846, pioneers traveling overland for the Willamette Valley would board rafts here and continue westward down the river. By the late 1850s the community was well established, with many buildings. By the late 19th century, the town had developed as a commercial center focused around the fishing, canning and mining industries. The arrival of the railroad assisted the growth of this community. The area expanded again when the Columbia River Highway reached the town in 1920. this highway firmly established the auto in the area as an influence on the streetscape, with garages, service stations and auto courts created to cater to the new machines and their owners.[2]

The State of Oregon escalated highway construction in 1917 when the legislature placed highway construction in the hands of a three-man commission appointed by the governor. This commission passed and submitted to the people a $6 million bond bill together with other assisting legislation. The first commission consisted of Simon Benson, chairman, W.L. Thompson, and E.J. Adams, who was succeeded by Robert A. Booth. The commission elected Herbert Nunn as its first state highway engineer and adopted the main trunk line roads, previously recommended by the legislature and outlined by preceding commissions, as the official highway system of the state. This included the Columbia, Pacific, Roosevelt, Coast, Dalles-California, and East-West Central Oregon routes--the system as a whole being practically that of the present mainline state highway map.[3]

The two-year stretch between November 30, 1918 and November 30, 1920 was a prosperous time for the state highway commission. Labor had loosened up thanks to returning soldiers and building materials were more available. At the same time, money from the Federal Aid Road Act of 1916 was coming into use. The number of motor vehicles in the state had increased from 11,857 to 48,632, and the demand for roads over which to operate them had become so great that another bond issue was authorized.[4] In 1919 the legislature became even more generous than it had been in 1917 and increased the highway bonds by an additional $10 million. Additional revenue was appropriated by the imposition of a tax of one cent per gallon on all gasoline used in motor vehicles. Oregon became the first state to adopt the gasoline tax as a source of income for road building. The commission expended during 1919 and 1920 the total sum of $20,234,177, exclusive of market roads, in highway construction.

This total expenditure bought 347.2 miles of paved highway; 369.4 miles of macadam; 761.4 miles of grading. A total of $1,311,300 was expended in bridge construction and design during this period. The biennium closed with funds on hand and more available, many contracts under way and pending, and the highway program going forward in high gear.[5]

This bridge was designed by state bridge engineer, Conde B. McCullough, as part of the agreement that required him, and his staff, to design bridges for cities and counties, at no charge.

DESIGN AND DESCRIPTION

The Mill Creek Bridge is a reinforced-concrete deck girder structure measuring 124' long and 31' wide. When viewed from the side, the bridge appears to be a series of four deck arches. However, it is a concrete girder bridge with arched curtain walls between the bridge piers. The

triangular shapes in the curtain wall are pebble dashed for textural contrast with the smooth concrete. The five footings are set twelve inches into solid rock and support three central piers that support the beams and road deck. The piers are reinforced concrete and at the junction point of the arched curtain wall a beveled capital is formed. A pair of curved brackets are located at the top of the piers and support the road deck. Single brackets are located in the center of the curtain walls, between the pebble-dashed panels.

The bridge was built by Lindstrom and Feigenson, contractors to the city of The Dalles. There were 394 cubic yards of concrete and 70,000 obs. of reinforcing steel used in the construction of this bridge.[6]

The floor beams span the piers and support four main cross beams. A reinforced concrete slab 8½" thick, with a 2½-inch crown, rests on the beams. Three inches of macadam pavement was laid on the slab. The roadway width is 20' with two 4-foot sidewalks, which have a 1-inch slope. The ornate railing consists of precast reinforced concrete urn-shaed balustrades with posts and concrete cap. The railing posts are decorated with rectangular panels of recessed pebble-dashed concrete. The railing design was modified in May, 1920 from an arch balustrade with wide openings, because they were deemed unsafe for small children. Railings are subject to appreciable changes of temperature, much larger than the rest of the structure. The balustrades on this bridge are badly deteriorated. Some balustrades are missing and many are lacking large portions of concrete due to expansion of the reinforcing bars, causing spalling of the concrete. Ten reinforced concrete lamp standards, 4' in height, are mounted on top of the railing posts, but are missing the original round glass globes. The railing flairs of outward at both entrances to the bridge. All smooth concrete surfaces of columns, wing walls, railings, curtain walls, curbs, outside bemas and cross struts were finished with a carborundum stone.

The bridge, built for the City of The Dalles, is associated with the Historic Columbia River Highway, constructed between Troutdale and The Dalles in 1913-1921. The eastern portion of the Columbia River Highway was dedicated in June, 1922. This bridge is a fine example of a reinforced concrete girder bridge on that highway. This bridge completed the Columbia River Highway from Portland to the Dalles. There was timber truss bridge at the site prior to this construction. The cost was $20,932.57.

In 1933 the Columbia River Highway was slightly realigned and straightened to the east city limits of The Dalles. By 1935 the highway was again realigned and the old route on West 6th Street was abandoned as a state highway.

Construction of Highway I-80N (now I-84) in the mid-1960s, further alleviated traffic on this bridge. Today this bridge sees heavy use by local traffic as it is a main route from The Dalles to Chenoweth Creek. The bridge is structurally sound but work is needed on the railing and road surface. The bridge railing is badly deteriorated. Because of its narrowness, alteration is being considered in the future. There is no maintenance file on this bridge at the Oregon Department of Transportation, Bridge Section.

ENDNOTES

1. Lewis McArthur, Oregon Geographic Names, Fifth edition (Portland: Western Imprints, Oregon Historical Society Press, 1982), pp.495-96.

2. Linda Dodds, National Register Nomination for The Dalles Commercial District. October, 1985.

3. Ralph Watson, Glimpses at Highway History, vol. VII (Salem, Oregon: Oregon State Highway Commission, 1950), p.1.

4. "Beginning with the Oregon Trail," Pacific Builder and Engineer 83, 7 October 1977, p.71.

5. Ralph Watson, Glimpses at Highway History, vol. VIII, p.2.

6. Oregon State Highway Commission, Fourth Biennial Report, 1918-1920, p.119.